

PATENT  
Customer No. 22,852  
Attorney Docket No. 06028.0030-00000

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	)	
	)	
Grégory PLOS et al.	)	Group Art Unit: 1751
	)	
Application No.: 10/688,999	)	Examiner: Eisa B. ELHILO
	)	
Filed: October 21, 2003	)	
	)	
For: PROCESS FOR RAPID DYEING	)	Confirmation No.: 4371
AND RAPID DECOLORATION OF	)	
HUMAN KERATIN FIBRES WITH	)	
CERTAIN DIRECT DYES	)	

**MAIL STOP AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

**VIA EFS-Web**

Sir:

**DECLARATION UNDER 37 C.F.R. § 1.132**

I, BAZIN de BEZONS Jean-Dominique, declare and state that:

1. I am a French citizen, residing at 6, rue Amaury Duval 92120 MONTROUGE, France.
2. I have been awarded a degree in Chemistry (DUT)
- 3 I have been employed by L'ORÉAL since April 15, 1994 and I am presently carrying out research on hair dyeing in the Applied Research Department of L'ORÉAL.
4. Given my education and experience, particularly in the area of hair dyeing, I consider myself able to provide the following testimony based on the experiments set forth below, which were conducted by me or under my direct supervision.

5. **COMPARATIVE TESTS**

I. **Rapid Dyeing Process**

The following comparative tests were realized:

Three direct dye compositions were prepared, one incorporating a direct dye according to the present invention (Basic Green 1) and two incorporating a direct dye according to the closest prior art (Basic Orange 14 and Basic Violet 10). The direct dyes were introduced at a concentration of 0,5% into the support below:

Compound	Concentration
Benzyl alcohol	10%
Polyethylene glycol (8 EO)	12%
Hydroxyethylcellulose MW 720 000 sold by the company Aqualon	1.5%
Direct dye *	0.5%
Distilled water	qs 100%

\* Basic Green 1 (BG1), Basic Orange 14 (BO14) or Basic Violet 10 (BV10).

These compositions were applied on natural hair containing 90% white hairs, with a bath ratio of 10, for 4 minutes, at room temperature. Then, the locks were rinsed with clear water and dried with a hood hair dryer. After drying, the locks were read in a Minolta CM 3600d colorimeter (10° angle, specular components excluded, illuminant D65) in the CIE L\*a\*b\* system.

According to the CIE L\*a\*b\* system, L\* indicates the lightness of the color of the hair. The chromaticity coordinates are expressed by the parameters a\* and b\*, a\* indicating the axis of red/green shades and b\* the axis of yellow/blue shades. h is the hue angle. The color obtained for each lock is measured by the chromaticity C\* having the following formula:

$$C^* = \sqrt{a^{*2} + b^{*2}}$$

$\Delta E$ , which is the color variation between a natural lock of hair and a dyed lock of hair, is obtained from the following formula:

$$\Delta E = \sqrt{(L^* - L_0^*)^2 + (a^* - a_0^*)^2 + (b^* - b_0^*)^2}$$

wherein  $L^*$  indicates the lightness and  $a^*$  and  $b^*$  are the chromaticity coordinates of the dyed lock of hair whereas  $L_0^*$  indicates the lightness and  $a_0^*$  and  $b_0^*$  are the chromaticity coordinates of the natural lock of hair.

The colorimetric results are given below:

	$L^*$ (D65)	$a^*$ (D65)	$b^*$ (D65)	$C^*$ (D65)	$h$ (D65)	$dE^*_{ab}$ (D65)
UNDYED HAIR (90% WHITE)	60.9	1.63	11.72	11.95	86.75	
<b>BG1</b> (INVENTIVE)	38.26	-36.39	-0.79	36.4	181.24	45.98
<b>BO14</b>	46.5	23.07	37.27	43.83	58.25	34.95
<b>BV10</b>	43.01	33.91	-8.78	35.02	345.49	41.05

Of the dyeing compositions tested according to the present invention and according to the closest prior art, only the composition according to the present invention had both an  $L^*$  value of less than 40 and a  $C^*$  value greater than 20.

## II. Rapid Stripping Process

The locks of the rapid dyeing process dyed with Basic Green 1 (BG1) were stripped according to the process from example 2 of the present application by application of 20-volumes aqueous hydrogen peroxide solution adjusted to pH 11 with sodium hydroxide within 5 minutes. Basic Green 1 was selected because it was the only composition tested above which led to the  $L^*$  and  $C^*$  values according to the present invention (an  $L^*$  value of less than 40 and a  $C^*$  value greater than 20).

According to these conditions, the dyeing was stripped within 5 minutes, as shown by the colorimetric results below:

	$L^*$ (D65)	$a^*$ (D65)	$b^*$ (D65)	$C^*$ (D65)	$h$ (D65)	$dE^*_{ab}(D65)$
UNDYED HAIR (90% WHITE)	60.9	1.63	11.72	11.95	86.75	
BG1	38.26	-36.39	-0.79	36.4	181.24	45.98
BG1 STRIPPED	58.37	-0.36	14.89	14.89	91.37	4.52

The results show that the  $L^*$  value after stripping (58.37) was very close to the  $L^*$  value before dyeing (60.9), thus proving the effect of the claimed rapid stripping process on keratin fibers dyed according to the present rapid dyeing process.

6. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated: 16/3/07

By: BAZIL D. BEZON

